MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT
OCEAN DUMPING PERMIT

PERMIT NUMBER AND TYPE: OD 88-01 Research

EFFECTIVE DATE: March 4, 1988

EXPIRATION DATE: September 4, 1988

REAPPLICATION DATE: July 1, 1988

APPLICANTS:	Star-Kist Samoa, Inc. P.O. Box 368 Pago Pago American Samoa 96799	Samoa Packing Co., Inc. P.O. Box 957 Pago Pago American Samoa 96799
PERMITTEES:	Star-Kist Samoa, Inc. P.O. Box 368 Pago Pago American Samoa 96799	Samoa Packing Co., Inc. P.O. Box 957 Pago Pago American Samoa 96799
WASTES GENERATED AT:	Star-Kist Samoa, Inc. P.O. Box 368 Pago Pago American Samoa 96799	Samoa Packing Co., Inc. P.O. Box 957 Pago Pago American Samoa 96799
WASTE TRANSPORTER:	Azuma Maru, No. 35 Pan Pacific Maritime, Inc. Pago Pago, American Samoa	
PORT OF DEPARTURE:	Pago Pago Harbor, American Samoa	

This Research Permit authorizes the transportation and dumping into ocean waters of certain material as described in the Special Conditions section pursuant to the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1401 et seq.), as amended, (hereinafter referred to as "the Act"), regulations promulgated thereunder, and the terms and conditions set forth below.

A research permit is being issued to determine whether dumping of a substance will unreasonably degrade or endanger human health, welfare or amenities, or the marine environment, ecological systems, or economic potentialities [33 U.S.C. 1412a(1)(B)]. The Environmental Protection Agency (EPA) has determined that the scientific merit of the proposed project outweighs the potential environmental risks or other damage that may result from the dumping [40 CFR 220.3(e)].

1. GENERAL CONDITIONS

1.1. Operation under this Ocean Dumping permit shall conform to all applicable Federal statutes and regulations including, but not limited to, the Act, the Clean Water Act (33 U.S.C. 1251 et seq.) and the Ports and Waterways Safety Act (33 U.S.C. 1221 et seq.)

1.2. All transportation and dumping authorized herein shall be undertaken in a manner consistent with the terms and conditions of this permit. The permittees designated above shall be liable for compliance with all such terms and conditions. The liability of the permittees is set forth in the Special Conditions and they are jointly responsible for compliance with the terms of this permit. The permittees shall be held jointly and severally liable under Section 105 of the Act (33 U.S.C. 1415) in the event of any violation of the permit.

1.3. Under Section 105 of the Act any person who violates any provision of the Act, 40 CFR 220 through 229 issued thereunder, or any term or condition of this permit shall be liable for a civil penalty of not more than $50,000 per day for each violation. Additionally, any knowing violation of the Act, 40 CFR 220 through 229 or the permit may result in a criminal action being brought with penalties of not more than $50,000 or one year in prison, or both. Violations of the Act or the terms and conditions of this permit include but are not limited to:

1.3.1. Transportation to, and dumping at any location other than that authorized by this permit;

1.3.2. Transportation and dumping of any material not identified in, more frequently than, or in excess of that identified in this permit, unless specifically authorized by a written modification hereto;

1.3.3. Failure to conduct permit monitoring as required in Special Conditions 3.1, 4.6 and 5.1; or

1.3.4. Failure to file waste stream and disposal site monitoring reports as required in Special Conditions 3.3, 4.6, 5.2 and 5.3.

1.4. Nothing contained herein shall be deemed to authorize, in any way, the transportation from the United States for the purpose of dumping into the ocean waters, into the territorial sea, or into the contiguous zone, the following material:

1.4.1. Radioactive wastes;

1.4.2. Materials, in whatever form, produced for radiological, chemical, or biological warfare; or

1.4.3. Persistent synthetic or natural materials which may float or remain in suspension in the ocean.

1.5. Nothing contained herein shall be deemed to authorize, in any way, violation of applicable American Samoa Water Quality Standards.

1.6. After notice and opportunity for a hearing, this permit shall be subject to revision, revocation or limitation, in whole or in part, subject only to the provisions of 40 CFR 222.3(b) through (h) and 40 CFR 223.2, as a result of a determination by the Regional Administrator of EPA that:

1.6.1. The cumulative impact of the permittees' dumping activities or the aggregate impact of all dumping activities in the dump site designated in Special Condition 2.2 should be categorized as Impact Category I, as defined in 40 CFR 228.10(c)(1);

1.6.2. There has been a change in circumstances relating to the management of the disposal site designated in Special Condition 2.2;

1.6.3. The dumping authorized by the permit would violate applicable American Samoa Water Quality Standards; or

1.6.4. The dumping authorized can no longer be carried out consistent with the criteria set forth in 40 CFR 227 and 228.

1.7. The permittees shall ensure at all times that facilities, including vessels, are in good working order and operate as efficiently as possible to achieve compliance with the terms and conditions of this permit. During all transportation and loading operations, there shall not be a loss of material to any waterway.

1.8. The permittees shall allow the Regional Administrator of EPA, the Commander of the Fourteenth U.S. Coast Guard District (USCG), the Executive Secretary of the American Samoa Environmental Quality Commission (EQC), and/or their authorized representatives:

1.8.1. To enter into, upon, or through the permittees' premises, vessels, or other premises or vessels under the control of the permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

1.8.2. To have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

1.8.3. To inspect any dumping equipment, navigational equipment, monitoring equipment or monitoring methods required in this permit;

1.8.4. To sample or require that a sample be drawn, under EPA, USCG, or EQC supervision, of any materials discharged or to be discharged; and

1.8.5. To inspect laboratory facilities, data, and quality control records required for compliance with any condition of this permit.

1.9. If material which is regulated by this permit is disposed of, due to an emergency to safeguard life at sea in locations or in a manner not in accordance with the terms of this permit, the permittees shall make a full report, in accordance with the provisions of 18 U.S.C. 1001, within 15 days to the EPA Regional Administrator, the USCG and the EQC or their delegates detailing the conditions of this emergency and the actions taken, including the nature and amount of material disposed.

1.10. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of rights, nor any infringement of Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining State or local assent required by applicable law for the activity authorized.

1.11. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities, or, except as authorized by this permit, the undertaking of any work in any navigable waters.

1.12. Unless otherwise provided for herein, all terms used in this permit shall have the meanings assigned to them by the Act or 40 CFR 220 through 229, issued thereunder.

2. SPECIAL CONDITIONS - PERMIT LIMITATIONS

Permit limitations are required to define the length of the permit period, identify the dump site location, describe the waste materials and define maximum permitted limits for each waste material.

2.1. Location of Waste Generator and Permit Term

2.1.1. The material to be dumped shall consist of waste materials resulting from the operation of the permittees' fish canneries at Pago Pago Harbor, American Samoa.

2.1.2. This permit shall expire at midnight on September 4, 1988.

2.2. Location of Disposal Site

Transportation for the purpose of ocean dumping shall terminate at, and waste disposal shall be confined to a circular area with 1.5 nautical mile diameter centered at 14° 22' 11" South latitude by 170° 40' 52" West longitude.

2.3. Description of Material

2.3.1. During the term of this permit, and in accordance with all other terms and conditions of this permit, the permittees are authorized to transport for disposal into ocean waters quantities of waste material that shall not exceed the following amounts:

2.3.1.1. Star-Kist Samoa

Waste Material	Amount
Dissolved Air Floatation (DAF) Sludge	60,000 gallons/day
Precooker Water	100,000 gallons/day
Press Water	40,000 gallons/day
Total Maximum Daily Volume	200,000 gallons/day

2.3.1.2. Samoa Packing Company

Waste Material	Amount
Dissolved Air Floatation (DAF) Sludge	31,400 gallons/day
Precooker Water	13,300 gallons/day
Press Water	12,200 gallons/day
Total Maximum Daily Volume	56,900 gallons/day

2.3.1.3. Total Permitted Waste Material Discharges

Waste Material	Amount
Dissolved Air Floatation (DAF) Sludge	91,400 gallons/day
Precooker Water	113,300 gallons/day
Press Water	52,200 gallons/day
Total Maximum Daily Volume	256,900 gallons/day

2.3.2. The transportation for disposal of floatables, garbage, domestic trash, waste chemicals, and solid waste is prohibited.

2.4. Waste Material Limitations

2.4.1. Permitted Physical and Chemical Constituents

Fish Processing Waste Material	Total Permitted Daily Volume To Be Dumped	Permitted Maximum Concentration Per Constituent	
DAF Sludge[a]	91,400 gal/day	Tot. Sus. Solids	219,000 mg/L
		BOD5	337,500 mg/L
		Total Phosphorus	3,390 mg/L
		Total Nitrogen	15,000 mg/L
		Oil and Grease	151,000 mg/L
Precooker Water	113,300 gal/day	Tot. Sus. Solids	102,000 mg/L
		BOD5	82,100 mg/L
		Total Phosphorus	1,295 mg/L
		Total Nitrogen	9,930 mg/L
Press Water	52,200 gal/day	Tot. Sus. Solids	441,000 mg/L
		BOD5	213,000 mg/L
		Total Phosphorus	11,360 mg/L
		Total Nitrogen	22,000 mg/L

a = Concentrations listed for each of the waste materials are based on historical information and data provided by the applicants.

2.4.2. The pH range for all waste materials shall not be less than 5.5 pH units nor greater than 7.0 pH units.

2.4.3. The Permitted Maximum Concentration and pH limits, listed above, shall not be exceeded at any time during the term of this permit.

3. SPECIAL CONDITIONS - ANALYSIS OF WASTE MATERIAL

Compliance with the permitted maximum concentrations defined in Special Condition 2.4 shall be determined by monthly monitoring of each of the permittees' waste streams before the material is loaded into the disposal vessel. Analysis of each waste stream (including DAF sludge, press water and precooker water) is required because these materials have been identified by the permittees for disposal. Additional analyses of fish processing wastes and reporting requirements are defined in this section. Sampling dates shall be scheduled within the first two weeks of the month to allow enough time for laboratory analysis and report writing in compliance with Special Condition 3.3.

3.1. Analyses of Waste Material

3.1.1. Concentrations of the constituents in Special Condition 2.4 shall be determined by pooling three replicate samples, taken on the day that sampling is scheduled, to be used as a composite sample.

3.1.2. In addition to Special Condition 3.1.1, the permittees shall measure the following parameters by pooling three replicate samples from each waste material to obtain a composite sample:

Parameter	Detection Limits
Bulk Density	0 01 g/mL
pH	0.1 pH units
Total Solids	10 mg/L
Total Volatile Solids	10 mg/L
BOD5	10 mg/L
Total Phosphorus	1 mg/L
Total Nitrogen	1 mg/L
Ammonia	1 mg/L
Oil and Grease	5 mg/L
Aluminum	0.1 mg/L
Chromium	0.1 mg/L
Nickel	0.1 mg/L
Copper	0.1 mg/L
Lead	0.1 mg/L
Cadmium	0.1 mg/L
Mercury	0.01 mg/L
Total Petroleum Hydrocarbons[a]	50 ug/L

a = Measured by infrared spectrophotometry (i.e., EPA Method 418.1)

3.1.3. All waste material sampling procedures, analytical protocols, and quality control/quality assurance procedures shall be performed in accordance with guidelines specified by EPA Region 9. The following references shall be used by the permittees where appropriate:

3.1.3.1. 40 CFR 136, EPA Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act;

3.1.3.2. Tetra Tech, Inc. 1985. Summary of U.S.. EPA-approved methods, standard methods and other guidance for 301(h) monitoring variables. Final program document prepared for the Marine Operations Division, Office of Marine and Estuarine Protection, U.S. Environmental Protection Agency. EPA Contract No. 68-01-693. Tetra Tech, Inc., Bellevue, Wa. 18pp.; and

3.1.3.3. Environmental Protection Agency. 1987. Quality assurance and quality control for 301(h) monitoring programs: Guidance on field and Laboratory Methods. Office of Marine and Estuarine Protection, Washington, D.C. EPA 430/9-86-004.

3.1.4. Any waste material constituents listed in Special Condition 3.1.2 that are shown to be consistently nondetectable after the first three sampling periods, may be eliminated from further analytical tests. Before elimination of the parameter is permitted, the permittee shall obtain written approval from EPA Region 9 and the EQC.

3.2. Analytical Laboratory

3.2.1. Within 30 days of the effective date of this permit, the name and address of the designated laboratory or laboratories and a description of all analytical test procedures and quality assurance/quality control procedures, including detection limits being used, shall be provided for EPA Region 9 approval.

3.2.2. Any potential variation or change in the designated laboratory or analytical procedures shall be reported, in writing, for EPA Region 9 approval.

3.2.3. EPA Region 9 may require analyses of quality control samples by any laboratories employed for purposes of compliance with Special Condition 3.1 and Appendix A. Upon request, the permittee shall provide EPA Region 9 with the analytical results from such samples.

3.2.4. A complete analysis of constituents, required in Special Condition 3.1, shall be made by the permittee and reported to EPA Region 9 and the EQC whenever there is a change in the quality of the waste, process configuration, or waste treatment. If deemed necessary by EPA Region 9, bioassays shall be required in addition to constituent analyses.

3.3. Reporting

3.3.1. Each permittee shall provide EPA Region 9 and the EQC with a report for each month of the permit containing:

3.3.1.1. Daily volumes, reported in gallons/day, of each waste material removed from the permittees' facilities;

3.3.1.2. Monthly waste material analyses demonstrating that the waste materials being dumped comply with the permitted limits of constituents listed in Special Condition 2.4;

3.3.1.3. Monthly analyses of the additional parameters listed in Special Condition 3.1,

3.3.1.4. The monthly amount of coagulant polymer and alum added to the waste streams; and

3.3.2. Such reports shall be submitted to EPA Region 9 and the EQC within 45 days of the end of the preceding month for which they were prepared. The reports shall be submitted within this 45 day period unless extenuating circumstances, communicated to EPA Region 9 and the EQC in writing and approved by the agencies, necessitate a delay in reporting.

3.3.3. A summary report of all monthly reports listed in Special Condition 3.3.1, including a statistical analysis of parameter variability and a detailed discussion of the results of the monthly reports, shall be submitted by each permittee to EPA and the EQC 45 days after the permit expires.

3.3.4. Upon detection of a violation of any permit limitations, the permittee shall send a written notification of this violation to EPA Region 9 and the EQC within five working days and a detailed written report of the violation shall be sent to the agencies within 15 working days.

4. SPECIAL CONDITIONS - VESSEL OPERATIONS

Specification of vessel operations is required to limit dumping activities to the dump site identified in Special Condition 2.2 and to record all activities that occur at sea.

4.1. Posting of the Permit

This permit, or a true copy thereof, shall be placed in a conspicuous place on any vessel which will be used for the transportation and dumping authorized by this permit. If the dumping vessel is an unmanned barge, the permit or true copy of the permit shall be transferred to the towing vessel.

4.2. Vessel Identification

Every vessel engaged in the transportation of wastes for ocean disposal shall have its name and number painted in letters and numbers at least four inches high on both sides of the vessel. The name and number shall be kept distinctly legible at all times, and a vessel without such markings shall not be used to transport or dump waste material.

4.3. Disposal Rate and Vessel Speed

The disposal vessel/barge shall discharge the material authorized by this permit beginning near the center of the disposal site identified in Special Condition 2.2. The disposal operation shall be conducted at a rate of 140 gallons per minute per knot, not to exceed 1400 gallons per minute at a maximum speed of 10 knots, while moving in a circle with a radius less than or equal to 0.2 nautical miles.

4.4. Navigational Equipment

The permittees shall employ an onboard electronic positioning system (see reference below) to accurately fix the position of the disposal vessel during all dumping operations. This system is subject to advanced approval by EPA Region 9 and the U.S. Coast Guard Liaison Office (CGLO) Pago Pago 15 days after the effective date of the permit.

Environmental Protection Agency. 1987. Evaluation of survey positioning methods for nearshore marine and estuarine waters. Office of Marine and Estuarine Protection, Washington, D.C. EPA 430/9-86-003.

4.5. Permitted Times for Disposal Operations

Dumping operations shall be restricted to daylight hours, unless an emergency exists and written authorization is obtained from the CGLO Pago Pago or the EQC prior to departure. EPA Region 9 shall be notified no later than five working days after the emergency in a written report of the situation.

4.6. Reporting of the Ocean Dumping Vessel Operations

4.6.1. The waste transporter shall maintain and the permittees shall submit copies of a monthly transportation and dumping logbook, including plots of all relevant information requested in Special Condition 4.6.2, to EPA Region 9, CGLO Pago Pago, and the EQC within 45 days of the end of the preceeding month for which they were prepared. The report shall be submitted within this 45 day period unless extenuating circumstances, communicated to EPA Region 9 and the EQC in a writing and approved by the agencies, necessitates a delay in reporting.

4.6.2. The logbook shall contain the following information for each waste disposal trip:

4.6.2.1. Permit number, date and serial trip number;

4.6.2.2. The time that loading of the vessel commences and ceases;

4.6.2.3. The time and navigational position that dumping commences and ceases;

4.6.2.4. A record of vessel speed and direction every 15 minutes during each dumping operation at the disposal site, and a plot on a navigational chart of the vessel's course;

4.6.2.5. Observe, note and plot the time and position of any floatable material;

4.6.2.6. Observe, note and plot the wind speed and direction every 30 minutes;

4.6.2.7. Observe and note wave height at the beginning and end of the disposal trip;

4.6.2.8. Observe, note and plot any unusual occurrences during the disposal trip; and

4.6.2.9. Observe, note and plot any other information relevant to the assessment of environmental impacts as a result of dumping activities.

5. SPECIAL CONDITIONS - DUMPSITE MONITORING

The monitoring program for disposal of wastes in the ocean must document short- and long-term effects of disposed wastes on the receiving waters, biota, and beneficial uses of the receiving waters; and determine compliance with permit terms and conditions. Once an adequate background database is established and predictable relationships among biological and physical variables are demonstrated, it may be appropriate to revise the monitoring program. Revisions may be made under the direction of EPA Region 9 at any time during the permit term, in compliance with 40 CFR 223.2 and 223.3. This may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, the location of sample stations, or the number and size of samples to be collected.

5.1. Monitoring Program

The permittees are required to implement the EPA Region 9-specified monitoring program defined in Appendix A as a means of determining the environmental impacts of ocean dumping of the waste. Monitoring cruises shall be scheduled within the first two weeks of each month, if possible, to allow enough time for laboratory analysis and report writing in compliance with Special Condition 5.2. Sampling days may be scheduled from Monday through Sunday. The permittees shall notify the EQC at least 24 hours prior to any scheduled monitoring activities.

5.2. Monitoring Reports

Monthly site monitoring reports shall be submitted to EPA Region 9 and the EQC within 45 days of the end of the preceeding month for which the samples were taken. The reports shall be submitted within this 45-day time period unless extenuating circumstances, communicated to EPA Region 9 and the EQC in a writing and approved by the agencies, necessitate a delay in reporting.

The reports shall include: neatly compiled raw data for all sample analyses, a quality assurance/quality control package for the data, statistical analysis of sample variability between stations and within samples for appropriate parameters, and a discussion of the results.

5.3. Final Summary Report

5.3.1. A report summarizing all of the data collected during the waste material and dump site monitoring programs shall be submitted to EPA Region 9, the EQC, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service 45 days after the permit expires.

5.3.2. At a minimum, the summary report shall contain the following sections:

5.3.2.1. Introduction (including a brief summary of previous ocean disposal activities),

5.3.2.2. Location of Study Sites,

5.3.2.3. Materials and Methods,

5.3.2.4. Results and Discussion (including comparisons and contrasts with previous data related to disposal of fish processing wastes off American Samoa),

5.3.2.5. Conclusions,

5.3.2.6. References,

5.3.2.7. Raw Data Appendix, and

5.3.2.8. Quality Assurance/Quality Control Information.

5.4. Quality Assurance/Quality Control

5.4.1. All appropriate phases of the monitoring, sampling, and laboratory analytical procedures shall adhere to the EPA Region 9-specified protocols and references listed in Special Condition 3.1.4.

5.4.2. The qualifications of the on-site Principal Investigator in charge of the field monitoring operation at the dump site shall be submitted to EPA Region 9 and the EQC for approval prior to the initial monitoring cruise. Notification of any change in this individual shall be submitted EPA Region 9 and EQC- at least 7 days before the cruise is scheduled.

6. SPECIAL CONDITIONS - NOTICE TO REGULATORY AGENCIES

6.1. Notice of Sailing to U.S. Coast Guard

6.1.1. The waste transporter shall provide telephone notification of sailing to CGLO Pago Pago at 633-2299 or the EQC at 633-2304 during working hours (7:00 a.m. to 3:30 p.m.) no later than 24 hours prior to the estimated time of departure for the dump site designated in Special Condition 2.2.

6.1.2. The waste transporter shall immediately notify CGLO Pago Pago or the EQC upon any changes in the estimated time of departure greater than two hours.

6.1.3. Surveillance of activities at the dump site designated in Special Condition 2.2, may be accomplished by unannounced aerial overflights, a USCG shiprider and/or an EQC shiprider who will be on board the towing/conveyance vessel for the entire voyage. Within two hours after receipt of the initial notification the waste transporter will be advised as to whether or not a shiprider will be assigned to the

6.1.4. The following information shall be provided to CGLO Pago Pago or the EQC in the above-mentioned notification of sailing:

6.1.4.1. The time of departure,

6.1.4.2. Estimated time of arrival at the dump site,

6.1.4.3. Estimated time of departure from the dump site, and

6.1.4.4. Estimated time of return to port.

6.2. Reports and Correspondence

6.2.1. Two copies of all reports and related correspondence required by General Condition 1.8, Special Conditions 3.1, 3.2, 3.3, 4.4, 4.5, 4.6, 5.2, 5.3, 5.4, and all other materials, including applications shall be submitted to EPA Region 9 at the following address:

Office of Pacific Island and Native American Programs (E-4)
U.S. Environmental Protection Agency, Region 9
215 Fremont Street
San Francisco, California 94105
Telephone (415) 974-7432

6.2.2. Two copies of all reports required by General Condition 1.8 and Special Conditions 4.4, 4.5, 4.6 and 6.1 sent to the U.S. Coast Guard shall be submitted to the following address:

Commanding Officer
U.S. Coast Guard Liaison Office
P.O. Box 249
Pago Pago, American Samoa 96799
Telephone 633-2299

6.2.3. Three copies of all reports required by General Condition 1.8 and Special Conditions 3.1, 3.2, 3.3, 4.4, 4.5, 4.6, 5.1, 5.2, 5.3 and 6.1 sent to the American Samoa Environmental Quality Commission shall be submitted to the following address:

Executive Secretary
American Samoa Environmental Quality Commission
Office of the Governor
Pago Pago, American Samoa 96799
Telephone 633-2304

6.2.4. One copy of the summary report required by Special Condition 5.3 shall be sent to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service at the following addresses:

Project Leader
Office of Environmental Services
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard
P.O. Box 50167
Honolulu, Hawaii 96850

Western Pacific Program Officer
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii 96822-2396

Signed this 4th day of March, 1988.

For the Regional Administrator

Harry Seraydarian
Director
Water Management Division

APPENDIX A

STAR-KIST SAMOA AND SAMOA PACKING COMPANY
OCEAN DUMPING RESEARCH PERMIT OD 88-01
JOINT OCEAN DUMP SITE MONITORING PLAN

7. MONITORING OF RECEIVING WATER

Movement of the waste plume shall be tracked during each monitoring cruise by the use of a transmissometer. The results of the first monitoring report will be evaluated by EPA Region 9 to determine whether Sections 7.1 and/or 7.3 need to be refined. The evaluation will be based on documented sampling results and recommendations of the permittees.

7.1. Location of Water Sampling Stations

7.1.1. On each sampling cruise, the latitude and longitude of all sampling stations shall be determined using appropriate navigational equipment.

7.1.2. The Principal Investigator shall ensure that the transmissivity profiles and samples, taken at the location marked "X" (Figure 1) for each station, are positioned as close as possible to the middle of the discharge plume. The middle of the plume shall be determined visually by the Principal Investigator each time a profile or sample is to be taken. Other transmissivity profiles, taken at the locations marked "A, B, C, and D" (Figure 1) for each station, shall be taken relative to the visually identified plume.

7.1.3. The following sample stations shall be occupied on each sampling cruise (see Figure 1):

7.1.3.1. Station 1X - 1.85 kilometers (1.0 nautical mile) up current of Station 2 to be used as the control station,

7.1.3.2. Station 2X - Center of the dumping operation,

7.1.3.3. Station 3 - Station 3X shall be sampled 30 minutes after Station 2X, with a transmittance profile at the visual plume centerline. Stations 3A and 3B shall be sampled as soon as possible after 3X, with the 3A profile 90° and 3B profile 270° relative to Station 3X. Both 3A and 3B shall be within the plume, 20 feet from the edge.

7.1.3.4. Station 4 - Station 4X shall be sampled 60 minutes after Station 2X, with a transmittance profile at the visual plume centerline. Stations 4A and 4B shall be sampled in the identical manner as Stations 3A and 3B, described above.

7.1.3.5. Station 5 - Station 5X shall be sampled 120 minutes after Station 2X, with a transmittance profile at the visual plume centerline. Stations 5A and 5B shall be sampled in the identical manner as Stations 3A and 3B, described above. Stations 5C and 5D shall be sampled as soon as possible after 5A and 5B, aligned perpendicular with 5X, 5A, and 5B inside the plume and located approximately one-half the distance between 5A (and 5B on the opposite side of the centerline), and 5X.

7.1.3.6. Station 6 - Station 6X shall be sampled 180 minutes after Station 2X, with a transmittance profile at the visual plume centerline. Stations 6A, 6B, 6C, and 6D shall be sampled in the identical manner as Stations 5A through 5D, described above.

7.1.3.7. Station 7 - Station 7X shall be sampled 240 minutes after Station 2X, with a transmittance profile at the visual plume centerline. Stations 7A, 7B, 7C, and 7D shall be sampled in the identical manner as Stations 5A through 5D, described above.

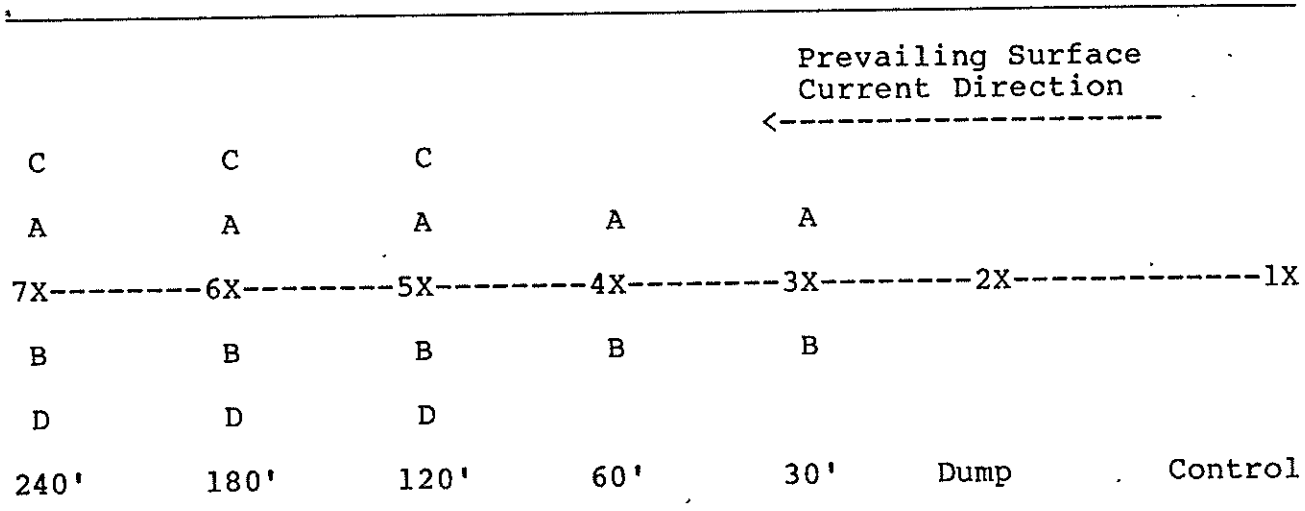

Figure 1. Orientation of Sample Stations (Top View) Relative to the Visual Plume Centerline at the Time of Sampling.

7.1.4. A transmittance profile shall be taken to 10 meter depth at Stations 3, 4, 5, and 6 with measurements recorded at depths of 2, 3, 6, 8, and 10 meters. Transmittance profiles shall be measured to the 20 meter depth at Station 1, 2, and 7. Exact sampling locations of each of the profiles to the 90° or 270° of the centerline at each station will be determined by using the "best professional judgement" of the Principal Investigator on the monitoring vessel.

7.1.5. Current speed and direction shall be determined at Stations 1X and 7X by using an appropriate profiling current meter on each sampling cruise before sampling commences. Current speed and direction will be measured and recorded at the following depths at Stations 1X and 7X: 3, 6, 8, 10, 12, 14, 16, 18, and 20 meters.

7.1.6. On each sampling cruise a water column profile to a depth of 20 meters of the following parameters shall be made at Stations 1X, 2X, and 7X using appropriate water column profiling equipment:

Parameter	Detection Limits
Dissolved Oxygen	0.1 mg/L
pH	0.1 pH units
Transmissivity	0.1 % transmittance
Secchi disk depth	Not Applicable

7.1.6.1 The profiles required in Section 7.1.6 shall be made to a depth of 20 meters with measurements at 1, 3, 6, 10, and 20 meters.

7.1.6.2. Water column profiling equipment shall be calibrated before and after each cruise to ensure high quality data collection.

7.1.7. Surface water conditions shall be recorded at all stations including:

7.1.7.1. Wind speed and direction;

7.1.7.2. Wave height; and

7.1.7.3. Observations of waste, color [e.g., Forel-Ule (FU) color scale], odor, floating materials, grease, oil, scum, foam or other floating materials attributed to fish wastes.

7.2. Water Column Characteristics to Be Measured

7.2.1. The limited permissible concentration (LPC) of the liquid phase of the waste material shall not be exceeded at the disposal site boundary four hours after disposal operations cease. The LPC is that concentration of the material which, after allowance for initial mixing as defined at 40 CFR 227.29, does not exceed applicable American Samoa Oceanic Water Quality Standards. EPA Region 9 and the EQC will evaluate the LPC based on EPA's Ocean Dumping Regulations and the water quality values obtained for the stations sampled during the tenure of this permit.

7.2.2. The following standards apply specifically to American Samoa oceanic water:

Parameter	Median not to exceed given value	Not to exceed given value 10% of the time	Not to exceed given value 2% of the time
Turbidity (NTU)	0.20	0.29	0.36
Total Phosphorus (ug P/L)	11.00	23.00	35.00
Total Nitrogen (ug N/L)	115.00	180.00	230.00
Chlorophyll a (ug/L)	0.18	0.40	0.65
Light Penetration Depth (feet)	150*	132*	120*
Dissolved Oxygen	Not less than 80% of saturation or less than 5.5 mg/L. If the natural level of dissolved oxygen is less than 5.5 mg/L, then the natural level shall become the standard.		
pH	The range shall be 6.5 to 8.6 pH units and within 0.2 pH units of that which would occur naturally.		

*To exceed the given value 50%, 90% and 98% of the time respectively.

7.2.3. Water column sampling depths for discrete samples collected at Stations 1X, 2X, and 7X (see Figure 1) shall include:

7.2.3.1. 1 meter,

7.2.3.2. 3 meters,

7.2.3.3. 10 meters, and

7.2.3.4. 20 meters below the surface.

7.2.4. Water samples shall be obtained using self-closing 3-liter water sample device at each depth listed in 7.2.3.

7.2.5. Water column parameters analyzed from discrete samples taken at the depths listed in 7.2.3 shall include:

Parameters	Detection Limits
Total Solids	0.1 mg/L
Total Volatile Solids	0.1 mg/L
Total Phosphorus[a]	0.001 mg/L
Total Nitrogen[a]	0.001 mg/L
Ammonia[a]	0.001 mg/L

a = samples should be acidified to pH <2 with sulfuric acid and refrigerated a 4° C until analysis.

7.2.6. If waste stream analyses, described in Special Condition 3.1, detect significantly high levels of constituents that may adversely affect marine water quality, EPA Region 9 may require that those constituents be added to the list of water column parameters in 7.2.5 above.

7.3. Frequency of Water Sampling Cruises and Station Sampling

7.3.1. Water samples and appropriate probe readings shall be collected when dumping operations are scheduled. Each station listed under Section 7.1 shall be sampled once each month. These samples shall be used to characterize the receiving waters at the disposal site.

7.3.2. The sample at Station 1X shall be taken prior to dumping activities.

7.3.3. Station 2X shall be sampled at a point within the plume one minute after discharge operations begin.

7.3.4. Stations 3X through 6X shall be sampled consecutively at the time intervals indicated in Sections 7.1.3.3 through 7.1.3.6. to allow efficient sampling of the discharge plume.

7.3.5 Station 7X shall be sampled at a point within the plume four hours after discharge operations begin.

8. MONITORING OF BIOLOGICIAL COMMUNITIES

8.1. Pelagic Resources

8.1.1. All sightings of fish, sea turtles, sea birds, or cetaceans near the disposal site shall be recorded including:

8.1.1.1. Time, location and bearing;

8.1.1.2. Species name(s); and

8.1.1.3. Approximate number of individuals.